EPA Region 7 TMDL Review

TMDL ID	321	*Water Body ID*	(4), 8, 9, Wilson Lake
Water Body Name	Wilson Lake and the Wilson Lake Watershed		
Pollutant	Chloride		
Tributary	WQLS: Cedar Cr. 30, Paradise Cr. 5 & 7, Eagle Cr. 6, Salt Cr. 20, Sweetwater Cr. 29		
State	KS	*HUC*	10260009
Basin	Smoky Hill/Saline		
Submittal Date	07/09/2004		
Approved	yes		

Submittal Letter

State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.

Kansas submittal letter received by EPA on July 9, 2004, formally submitting the TMDL document for approval; a revision to this TMDL was received September 29, 2004.

Water Quality Standards Attainment

The water body's loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.

The current water quality standard (WQS) for domestic water supply is set at 250mg/L (K.A.R.28-16-28e(c)(3)(A). The loading capacity in this phased TMDL is set at the current numeric criterion of 250 mg/L for monitoring stations 011 and 538. Provisional phase 2 targets have also been set at these monitoring stations at the average concentration for samples collected at flows less than the median rate. However, these provisional targets will have to be established in the future to reflect true background conditions, using the appropriate administrative and technical WQS procedures and processes. Using the current chloride criterion of 250 mg/L will result in attainment of WQS.

Numeric Target(s)

Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

The water quality standards, beneficial uses and numeric criteria are described. The phase one target is the numeric criterion for chloride, 250 mg/L.

Link Between Numeric Target(s) and Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.

The numeric target is the numeric criterion and the link between the target and the chloride is direct.

Source Analysis

Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered.

There are natural, high background concentrations of chloride due to the discharge of naturally saline groundwater from the Dakota aquifer into the alluvial aquifer of the Saline River and then into the river in Russell County. There is a general decrease in flow due to conservation practices and groundwater consumption/irrigation. There have been substantial land and water use changes over time in the basin due to irrigation. There are thirteen NPDES permitted facilities in the watershed; ten are non-discharging lagoons. All other potential sources are discussed.

Allocation

Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.

The allocation is expressed as a TMDL load duration curve in pounds per day of chloride, which is derived from the numeric criterion and the flow curve. The allocation is a function of the flow; phase one allocations and margins of safety are expressed at both low flow (90% exceedence) and median flow (50% exceedence).

WLA Comment

The total WLA entering Wilson Lake is 0.24 tons/day. Phase 1 wasteload allocations for the following monitoring stations are set: Station 548 - 0.04 tons/day, station 011 - zero, station 538 - 0.22 tons/day. Individual WLAs included in the station WLAs for the discharging permitted facilities are 0.03 tons/day for the Natoma MWTP, 0.19 tons/day for

the Plainville MWTP, and 0.04 tons/day for the Quinter MWTP. The WLA for the ten non-discharging NPDES facilities is zero.

LA Comment

Phase 1 load allocations for the following monitoring stations are set: Station 548 - 0.97 tons/day for low flow and 10.15 tons/day at median flow, station 011 - 2.19 tons/day at low flow and 17.74 tons/day at median flow, station 538 - 0.36 tons/day at low flow and 2.67 tons/day at median flow.

Margin of Safety

Submittal describes explicit and/or implicit margin of safety for each pollutant. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided.

The MOS is explicit and set at 10% of the calculated load allocations for the following stations: Station 548 - 0.11 tons/day for low flow and 1.13 tons/day at median flow, station 011 - 0.24 tons/day at low flow and 1.97 tons/day at median flow, station 538 - 0.04 tons/day at low flow and 0.30 tons/day at median flow.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).

Seasonal variation is documented with the seasonal consistency of elevated chloride levels.

Public Participation

Submital describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).

Public meetings were held on January 7 and March 5, 2003 in Hays to discuss this particular TMDL and others in the Smoky Hill/Saline basin. An internet web site also housed information for the public to access. A public hearing, held in Hays, was conducted on June 2, 2003 to discuss the Smoky Hill/Saline basin TMDLs; the Smoky Hill/Saline Basin Advisory Committee met to discuss the TMDLs in the basin on October 3, 2002, and January 7, March 5, and June 2, 2003.

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).

KDHE will continue to monitor at stations 011, 538, and in Wilson Lake. Priority status will be evaluated in 2008 including application of numeric criteria based on background concentrations. Desired endpoints will be refined if the impaired status remains. Monitoring of chloride levels in effluent will be a condition of NPDES and state permits for facilities.

Reasonable assurance

Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.

Reasonable assurance includes numerous authorities and funding through the Kansas Water Plan.